



DEPARTMENT OF ENERGY
Environmental Management Los Alamos Field Office (EM-LA)
Los Alamos, New Mexico 87544

EMLA-2021-0152-02-001

March 9, 2021

Mr. Kevin Pierard
Bureau Chief
Hazardous Waste Bureau
New Mexico Environment Department
2905 Rodeo Park Drive East, Building 1
Santa Fe, NM 87505-6313

Subject: Request for Certificates of Completion for Five Solid Waste Management Units in the Cañon de Valle Aggregate Area and One Solid Waste Management Unit and One Area of Concern in the S-Site Aggregate Area

Dear Mr. Pierard:

In accordance with Section XXI of the Compliance Order on Consent (Consent Order), the U.S. Department of Energy (DOE) Environmental Management Los Alamos Field Office (EM-LA) is requesting certificates of completion with controls for the following solid waste management units (SWMUs) within the Cañon de Valle Aggregate Area:

- SWMU 16-003(n), Sump
- SWMU 16-003(o), Sumps
- SWMU 16-026(j2), Outfall from Former Building 16-345
- SWMU 16-029(f), Sump
- SWMU 16-029(i), Sump [duplicate of SWMU 16-003(n)]

EM-LA is also requesting certificates of completion with controls for the following SWMU and area of concern (AOC) within the S-Site Aggregate Area:

- SWMU 13-003(a), Soil Contamination from a Former Septic Tank
- AOC 13-003(b), Drain Field

SWMUs 13-003(a), 16-003(n), 16-003(o), 16-026(j2), 16-029(f), and 16-029(i) and AOC 13-003(b) were recommended for corrective action complete with controls in the “Phase II Investigation Report for the TA-16-340 Complex [Consolidated Units 13-003(a)-99 and 16-003(n)-99 and Solid Waste Management Units 16-003(o), 16-026(j2), and 16-029(f)], Revision 1” (hereafter the Phase II IR) (Los Alamos National Laboratory [LANL] document LA-UR-09-0309). The Phase II IR concluded the nature and extent of contamination are defined at SWMUs 13-003(a), 16-003(n), 16-003(o), 16-026(j2), 16-029(f), and 16-029(i) and AOC 13-003(b). In addition, the Phase II IR concluded that these SWMUs and AOC pose no potential unacceptable risks or doses to human health under the industrial and construction worker scenarios and pose no potential unacceptable risk to ecological receptors.

The Phase II IR was approved with modifications in the New Mexico Environment Department's (NMED's) "Approval with Modifications for the Phase II Investigation Report for the TA-16-340 Complex [Consolidated Units 13-003(a)-99 and 16-003(n)-99 and Solid Waste Management Units 16-003(o), 16-026(j2), and 16-029(f)], Revision 1" letter dated February 9, 2009 (HWB-LANL-08-032).

The approval with modifications noted that the reported cancer risk for SWMU 16-003(o) under the industrial scenario was 3×10^{-5} because of high concentrations of arsenic and benzo(a)pyrene on steep terrain where soil removal could not be performed, but industrial exposure was deemed unlikely at this location. The Phase II IR concluded risk to the industrial worker at SWMU 16-003(o) was overestimated because arsenic concentrations were similar to background and the upper confidence limit (UCL) for benzo(a)pyrene was skewed by high concentrations in samples from the steep terrain. The risk without arsenic and using the mean concentration of benzo(a)pyrene as the exposure point concentration rather than the UCL was 1×10^{-5} . NMED's approval with modifications indicated that because the steepness of terrain was a line of evidence to support acceptable industrial risk, land use control limiting access to the steeper terrain excluded from remediation was warranted.

The approval with modifications also noted that the hazard index (HI) under the construction worker scenario was greater than 1 at all sites because of aluminum and manganese. The Phase II IR concluded the HIs for the construction worker were overestimated because concentrations of aluminum and manganese were within the range of background concentrations. The HIs without aluminum and manganese under the construction worker scenario were less than 1 for all sites. NMED's approval with modifications indicated that it did not appear site concentrations of aluminum and manganese were within the range of background concentrations and that engineering controls to mitigate inhalation exposure to construction workers would be required in the event the sites were developed.

The Phase II IR included results from sampling of alluvial groundwater and surface water from three alluvial wells and two surface water sampling locations in Fishladder Canyon. The approval with modifications required EM-LA to continue groundwater and surface water monitoring following the schedule outlined in the approved annual Interim Facility-Wide Groundwater Monitoring Plan (IFGMP). Following approval of the Phase II IR in 2009, EM-LA has continued to perform monitoring and report monitoring results in accordance with the annual approved IFGMP. As described in the Consent Order, the IFGMP is revised annually, including changes to monitoring locations, frequencies, and analytical suites. The most recent version of the IFGMP ("Interim Facility-Wide Groundwater Monitoring Plan for the 2021 Monitoring Year, October 2020–September 2021, Revision 1" EM2020-0404) specifies monitoring from one alluvial well in Fishladder Canyon. Surface water sampling in Fishladder Canyon is no longer performed under the IFGMP because historical sampling locations are now generally dry following cessation of effluent discharges.

The Phase II IR also described installation of erosion-control best management practices (BMPs) in the upper slope and drainage to Fishladder Canyon. The approval with modifications required EM-LA to maintain and conduct annual inspections of these BMPs and to submit a summary report annually by December 31. On January 5, 2017, NMED approved submittal of the summary reports on a biannual basis rather than annually.

After the Phase II IR had been approved, the U.S. Environmental Protection Agency (EPA) issued LANL's National Pollutant Discharge Elimination System Storm Water Individual Permit (Permit No. NM0030759) (hereafter the IP). The IP became effective on November 1, 2010, and regulates storm water discharges from certain SWMUs and AOCs. SWMU 16-003(o) is included in the IP as part of site monitoring area (SMA) CDV-SMA-2.3. The BMPs installed during the Phase II investigation were incorporated into the IP as controls for CDV-SMA-2.3, and inspection and maintenance activities are performed each year as required by the IP. Inspection and maintenance activities are reported to EPA annually in the Site Discharge Pollution Prevention Plan required by the IP.

Based on the results presented in the Phase II IR, SWMUs 13-003(a), 16-003(n), 16-026(j2), 16-029(f), and 16-029(i) and AOC 13-003(b) do not pose unacceptable human health risk or dose under the industrial scenario and do not pose an unacceptable risk to ecological receptors.

SWMU 16-003(o) does not present unacceptable noncarcinogenic risk or dose under the industrial scenario but may present a potentially unacceptable carcinogenic risk if exposure to arsenic and benzo(a)pyrene in the drainage slope above Fishladder Canyon occurs. SWMU 16-003(o) does not pose an unacceptable risk to ecological receptors.

SWMUs 13-003(a), 16-003(n), 16-003(o), 16-026(j2), 16-029(f), and 16-029(i) and AOC 13-003(b) may present potentially unacceptable risk to human health under the construction worker scenario because of elevated concentrations of aluminum and manganese. As described below, controls specified in the approval with modifications related to industrial exposure to arsenic and benzo(a)pyrene, construction worker exposure to aluminum and manganese, groundwater monitoring in Fishladder Canyon, and inspection and maintenance of BMPs in Fishladder Canyon are not warranted. Controls associated with industrial and construction worker exposure are not needed based on evaluation of exposure frequency, revisions to soil screening levels (SSLs), and distribution of contaminant concentrations. Controls associated with groundwater monitoring and BMP maintenance are not needed because they are already being implemented under other regulatory programs.

The risk from industrial exposure is based on an exposure frequency of 225 days/year. The only current industrial exposure to contaminants in the drainage is to workers performing inspections and maintenance required by the IP. The most recent biennial inspection and maintenance report indicated inspections were performed 7 times during 2019 and 3 times during 2020, for an average exposure frequency of 5 days/year. No maintenance was required during 2019 or 2020. Further, the report notes that the area has remained in stable condition with only minor maintenance activities required in over 11 years. Thus, future exposure is expected to be limited to required annual inspections and inspections after significant rainfall events. This exposure will be substantially less than the 225 days/year used to evaluate potential risk to industrial workers.

The mesa-top portion of SWMU 16-003(o) is associated with subsurface features at depths greater than 1 ft below ground surface and there is no pathway for exposure to industrial workers on the mesa top. Lastly, it is noted that the risk evaluation in the Phase II IR was based on SSLs developed in 2006. SSLs are revised periodically based on new toxicological or exposure information and the most recent (2019) industrial SSLs for arsenic and polycyclic aromatic hydrocarbons (PAHs), including

benzo(a)pyrene, are higher than those used in the Phase II IR. The estimated cancer risk for the industrial scenario at SWMU 16-003(o) based on 2019 SSLs is 1×10^{-5} , which is equivalent to NMED's target. Based on these considerations, SWMU 16-003(o) does not pose an unacceptable risk to industrial workers, and land use control limiting access to the steeper terrain excluded from remediation is not warranted.

The construction worker HI was greater than 1 for all sites due to aluminum and/or manganese. Aluminum was the principal contributor to the construction worker risk at SWMUs 16-026(j2) and 16-029(f) and manganese was the principal contributor at the other sites. At SWMU 13-003(a) and AOC 13-003(b), which were evaluated as Consolidated Unit 13-003(a)-99, the exposure point concentration (EPC) for manganese was skewed by the manganese concentration of one sample, which was substantially higher than all the other results. The EPC, which was the UCL, was 924 mg/kg. The maximum concentration was 1450 mg/kg and the concentrations of the other 9 samples ranged from 146 mg/kg to 563 mg/kg, and were below background values (BVs). The average concentration was 385 mg/kg and the median concentration was 255 mg/kg. Similarly, at SWMUs 16-003(n) and 16-029(i), which were evaluated as Consolidated Unit 16-003(n)-99, the EPC was 635 mg/kg and was also skewed by one high result. The maximum concentration was 2260 mg/kg and the concentrations of the other 30 samples ranged from 84 mg/kg to 566 mg/kg, with only one of these results above BV. The average concentration was 367 mg/kg and the median concentration was 310 mg/kg. The average and median concentrations at Consolidated Units 13-003(a)-99 and 16-003(n)-99 may be more representative of the central tendency of the data than the UCL.

As discussed above, the risk evaluation in the Phase II IR was based on SSLs developed in 2006 and the current construction worker SSLs for aluminum and manganese are greater than those used in the Phase II IR. The 2006 construction worker SSL for aluminum was 14,400 mg/kg and the current SSL is 41,400, which is 2.8 times to 3.8 times the aluminum EPCs for Consolidated Units 13-003(a)-99 and 16-003(n)-99 and SMWUs 16-003(o), 16-026(j2), and 16-029(f). The 2006 construction worker SSL for manganese was 270 mg/kg and the current SSL is 464 mg/kg. The current SSL for manganese is greater than the EPC for SWMU 16-003(o) and greater than the average and median manganese concentrations for Consolidated Units 13-003(a)-99 and 16-003(n)-99 [manganese was not a chemical of potential concern at SWMUs 16-026(j2) and SWMU 16-029(f)]. Based on these considerations, SWMUs 13-003(a), 16-003(n), 16-003(o), 16-026(j2), 16-029(f), and 16-029(i) and AOC 13-003(b) do not pose an unacceptable risk to construction workers, and engineering controls to mitigate inhalation exposure to construction workers is not warranted.

Groundwater monitoring in Fishladder Canyon is performed under the Consent Order in accordance with the IFGMP and surface water sampling in Fishladder Canyon is no longer performed under the IFGMP because historical sampling locations are now generally dry. Therefore, controls requiring groundwater and surface water monitoring are not necessary as part of a certificate of completion. Similarly, maintenance and inspection of BMPs in the upper slope and drainage to Fishladder Canyon and reporting of maintenance and inspection activities are required by the IP. Therefore, controls requiring BMP inspection, maintenance, and reporting are not required under the Consent Order.

EM-LA requests certificates of completion for SWMUs 13-003(a), 16-003(n), 16-003(o), 16-026(j2), 16-029(f), and 16-029(i) and AOC 13-003(b) with controls for maintaining industrial land use, which includes subsurface construction activities.

If you have any questions, please contact Kent Rich at (505) 660-6570 (kent.rich@em-la.doe.gov) or Cheryl Rodriguez at (505) 414-0450 (cheryl.rodriguez@em.doe.gov).

Sincerely,

**Arturo Q.
Duran**



Digitally signed by Arturo Q.
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Date: 2021.03.01 06:25:15
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Arturo Q. Duran
Compliance and Permitting Manager
Environmental Management
Los Alamos Field Office

CC (letter emailed):

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Pamela T. Maestas

From: Martinez, Cynthia, NMENV <cynthia.martinez1@state.nm.us>
Sent: Tuesday, March 9, 2021 2:29 PM
To: Pamela T. Maestas
Subject: Re: Submittal to NMED on 3/9/2021 of Rqst for COCs for 7 SWMUs/AOCs in CdV and S-Site Agg Areas

Received.
Thank you

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From: Pamela T. Maestas <pamela.maestas@em-la.doe.gov>
Sent: Tuesday, March 9, 2021 2:23:14 PM
To: 'Pierard, Kevin, NMENV' <Kevin.Pierard@state.nm.us>
Cc: 'Dhawan, Neelam, NMENV' <neelam.dhawan@state.nm.us>; siona.briley@state.nm.us <siona.briley@state.nm.us>; Chris.Catechis@state.nm.us <Chris.Catechis@state.nm.us>; Krambis, Christopher, NMENV <Christopher.Krambis@state.nm.us>; Schatz, Mitchell, NMENV <Mitchell.Schatz@state.nm.us>; 'Martinez, Cynthia, NMENV' <cynthia.martinez1@state.nm.us>; Emily M. Day <Emily.Day@em-la.doe.gov>; Regulatory Documentation <RegDocs@EM-LA.DOE.GOV>; cheryl.rodriguez@em.doe.gov <cheryl.rodriguez@em.doe.gov>; Kent Rich <kent.rich@em-la.doe.gov>
Subject: [EXT] Submittal to NMED on 3/9/2021 of Rqst for COCs for 7 SWMUs/AOCs in CdV and S-Site Agg Areas

Mr. Pierard,

Attached for submittal is a pdf of the following:

- Request for Certificates of Completion for Five Solid Waste Management Units in the Cañon de Valle Aggregate Area and One Solid Waste Management Unit and One Area of Concern in the S-Site Aggregate Area (EMLA-2021-0152-02-001, letter)

Please acknowledge receipt of this submittal by responding to this email.

Let me know if you have any questions.

Thank you.

Pamela T. Maestas

Regulatory Documentation Manager

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